

CLAIMS

What is claimed is:

1. A fluid-powered imaging system comprising:
a housing;
an imaging device arranged within the housing;
a fluid-powered motor arranged within the housing; and
an electrical generator operatively coupled to and powering the
imaging device, the electrical generator being driven by and operably coupled to the
fluid-powered motor and arranged within the housing.
2. The system according to claim 1 further comprising a fluid distribution
system for receiving and supplying a first portion of a fluid to operate the fluid-
powered motor.
3. The system according to claim 2 wherein at least a portion of the fluid
distribution system is located adjacent to a portion of the imaging device to cool the
imaging device with the first portion and a second portion of the fluid.
4. The system according to claim 2 wherein at least a portion of the fluid
distribution system is configured to direct at least the first portion and a second
portion of the fluid by an eye portion of the imaging device to keep the eye portion
substantially free from contaminants.
5. The system according to claim 2 wherein the fluid comprises air or
nitrogen.
6. The system according to claim 1 wherein the imaging device has an
eye portion positioned adjacent to an open end of the housing.
7. The system according to claim 1 further comprising at least one
eductor coupled to an outlet for fluid discharged from the fluid-power motor, the
eductor entraining air within the housing with the discharged fluid.

8. The system according to claim 1 wherein the imaging device comprises a television camera, a video camera, an infrared camera or a pyrometer.

5 9. A method of operating an imaging device, the method comprising:
supplying a fluid from a source;
generating power from a flow of the fluid; and
powering the imaging device with the generated power.

10 10. The method according to claim 9 further comprising cooling the imaging device by directing at least a portion of the flow of the fluid past the imaging device.

15 11. The method according to claim 9 further comprising directing at least a portion of the flow of the fluid past an eye portion of the imaging device to keep the eye portion substantially free from contaminants.

20 12. The method according to claim 9 wherein an amount of the generated power is in proportion to a rate of the flow of the fluid.

13. The method according to claim 9 further comprising capturing an image through an eye portion of the imaging device.

25 14. The method according to claim 9 wherein the fluid comprises air or nitrogen.

30 15. A fluid-powered imaging system comprising:
an imaging device;
a fluid-powered motor;
an electrical generator operatively coupled to the fluid-powered motor,
the generator being driven by the fluid-powered motor to power the imaging device;
a housing enclosing at least a portion of the fluid-powered motor, the generator and the imaging device; and

a fluid distribution system for receiving and supplying a first portion of a fluid to power the fluid-powered motor, at least a portion of the fluid distribution system being located adjacent to a portion of the imaging device to cool the imaging device with the first portion and a second portion of the fluid, and at least a portion of the fluid distribution system being configured to direct at least the first portion and the second portion of the fluid by an eye portion of the imaging device to keep the eye portion substantially free from contaminants.

16. The system according to claim 15 wherein the fluid distribution system comprises one or more chambers within the housing.

17. The system according to claim 15 further comprising at least one eductor coupled to an outlet for fluid discharged from the fluid-power motor, the eductor entraining air within the housing with the discharged fluid.

18. The system according to claim 15 wherein the imaging device has an eye portion positioned adjacent to an open end of the housing.

19. The system according to claim 15 wherein the fluid comprises air or nitrogen.

20. The system according to claim 15 wherein the imaging device comprises a television camera, a video camera, an infrared camera or a pyrometer.

21. A method of operating an image taking device using fluid, the method comprising:

supplying a fluid from a source;

generating power from a first portion of a flow of the fluid;

powering an imaging device with the generated power;

cooling the imaging device by directing at least the first portion and a second portion of the fluid past the imaging device; and

directing at least the first portion and the second portion of the fluid past an eye portion of the imaging device to keep the eye portion substantially free from contaminants.

5 22. The method according to claim 21 wherein an amount of the generated power is in proportion to a rate of the flow of the fluid.

 23. The method according to claim 21 further comprising capturing an image through an eye portion of the imaging device.

10 24. The method according to claim 21 wherein the fluid comprises air or nitrogen.

 25. A fluid-powered inspection device, the device comprising:
15 a body having a tubular shell terminating in an open end;
 an imaging device having a portion arranged within the tubular shell in a spaced relation thereto to define an annular chamber therebetween, the imaging device having an eye portion positioned adjacent to the open end;
 a fluid-powered motor arranged within the body, the fluid-powered
20 motor having a fluid inlet for connection to a suitable source of fluid and having a fluid outlet to discharge the fluid; and
 a generator arranged within the body and operatively coupled to the fluid-powered motor, the generator supplying electrical power to the imaging device as a function of a fluid flow passing through the fluid-powered motor, the fluid
25 discharged from the fluid-powered motor fluid outlet passing through the annular chamber and being discharged through the open end, cooling the imaging device, and keeping the eye portion substantially free from contaminants.

 26. The device according to claim 25 further comprising an eductor, the
30 fluid discharged from the fluid-powered motor fluid outlet passing through the eductor and entraining air from within the chamber into the fluid discharged through the open end.

27. The device according to claim 26 wherein the fluid supplied from the suitable source is combined with the fluid discharged from the fluid-powered motor outlet upstream of the eductor.

5 28. The device according to claim 25 wherein the eye portion further comprises at least one lens.

29. The device according to claim 25 wherein the fluid is air.

10 30. The device according to claim 25 wherein the imaging device is a video camera, a television camera, an infrared camera or a pyrometer.

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